

Modeling People's Responses to Landscape Treatments



USDA Forest Service
North Central Research Station
Evanston, IL
(847) 866-9311

Sarah McCaffrey

working with John Dwyer, Paul Gobster, and Herb Schroeder

Modeling People's Responses to Landscape Treatments

National Fire Plan Research

Purpose: Evaluate public perceptions of and responses to fire management treatments across a wide range of social and biophysical settings.

Goal: To provide land managers with information on the most effective communication and treatment strategies to help reduce controversies and strengthen constituencies for fire management treatments.



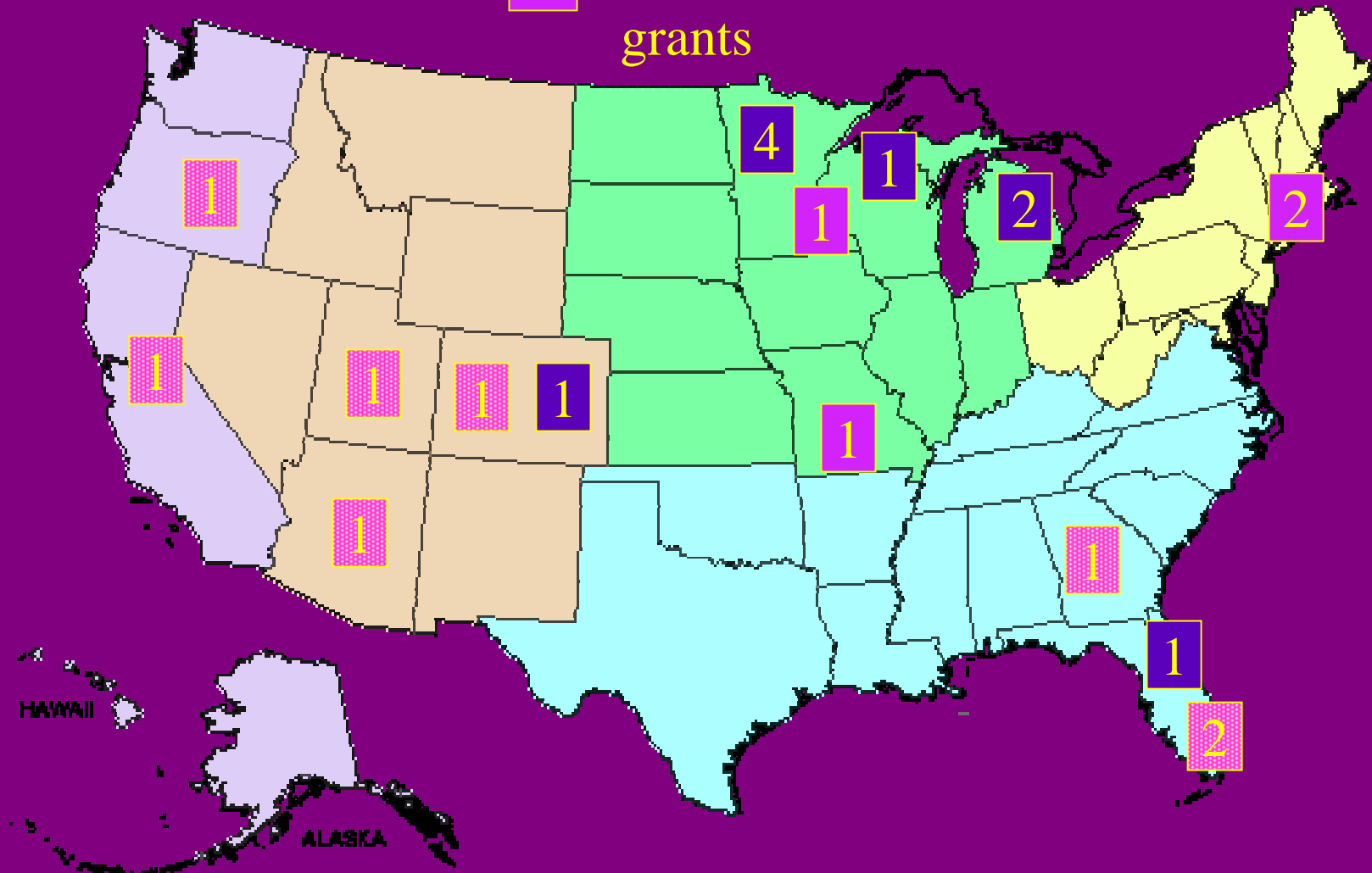
1. *Journal of the American Medical Association*, 2000; 283: 2686-2692.

2001 NC RJVA Sites

JFSP sites tied in with NC projects

11

Sites added with 2002&2003 RJVA grants



Different Approaches

Homeowner Interviews

- **Martha Monroe** (U of Florida) *Florida*
- **Kristen Nelson** (U of Minnesota) *Minnesota*

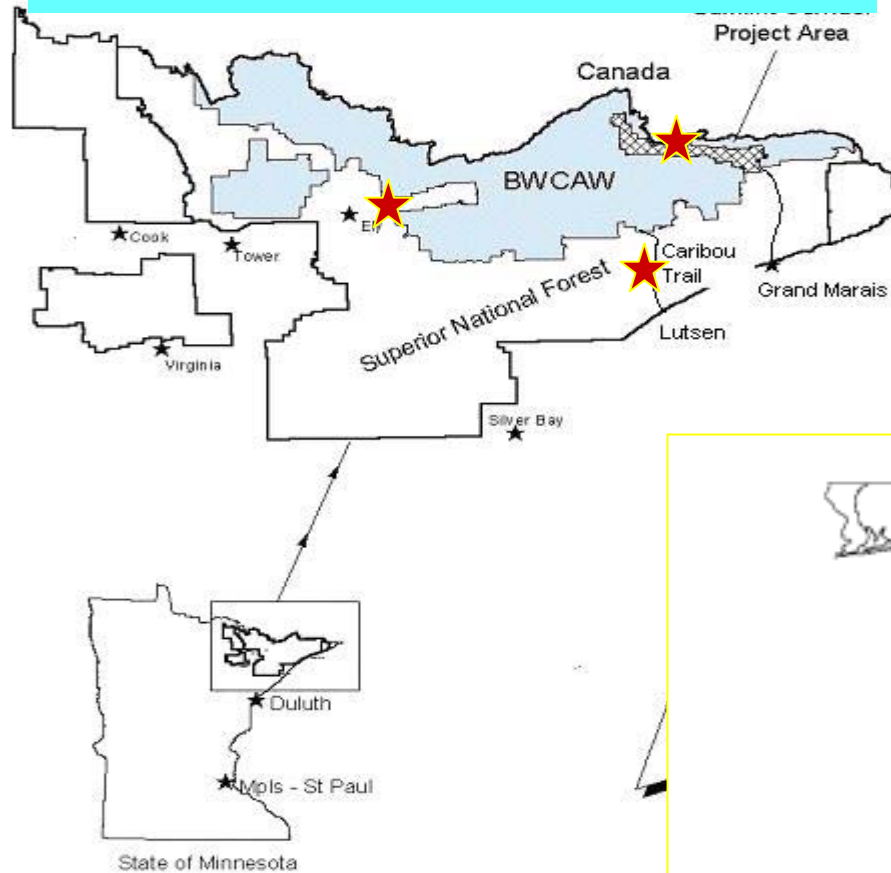
Focus groups and Mail Surveys

- **Alan Bright** (Colorado State) *Colorado, Minnesota*
- **Chris Vogt** (Michigan State) *Michigan, Missouri*
- **Bruce Shindler** (U of Oregon) *Minnesota, Wisconsin, and Michigan*
- **Robert Ryan** (U of Mass) *Massachusetts and Long Island*

Computer Visualizations

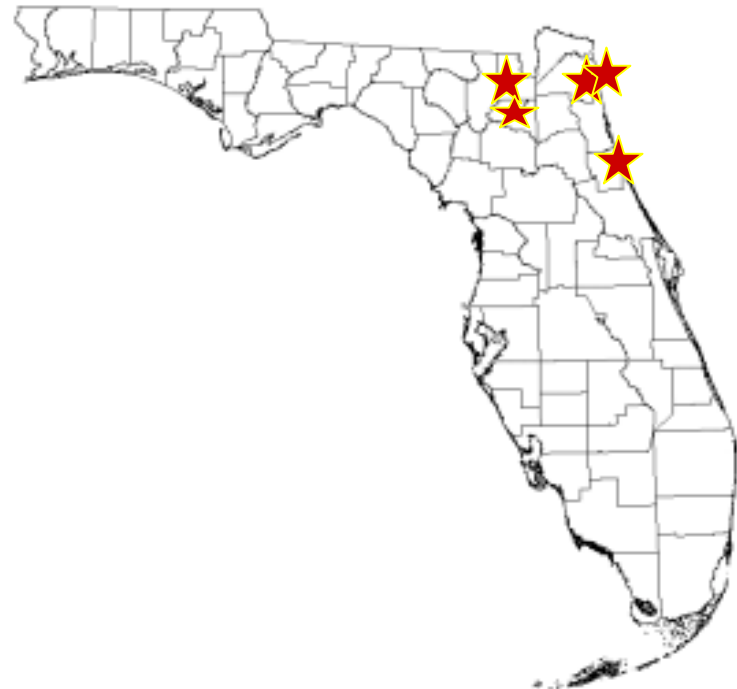
- **Terry Daniel** (U of Arizona) *Minnesota (Gunflint, Itasca)*
- **Brian Orland** (Penn State) *Minnesota (Gunflint, Itasca)*
- **Joanne Vining** (U of Illinois) *Minnesota (Gunflint, Itasca)*

Minnesota



Homeowner Interviews - Photo Elicitation

Florida





Florida Manipulated Photographs





Minnesota

Clear
Some Sides

Gradually

Landscaping Practices

Open Space

Old
meadow

n = 5

Deep Woods

Wilderness

n = 5

Florida



Open Space

- pasture
- mowed

n = 8

protection

- view

n = 13

- shade

n = 13

Woods

ens

- less risky
structure or
ecosystem

n = 9

Survey of WUI homeowners on Caribou and Gunflint Trails, BWCA, MN, 2001

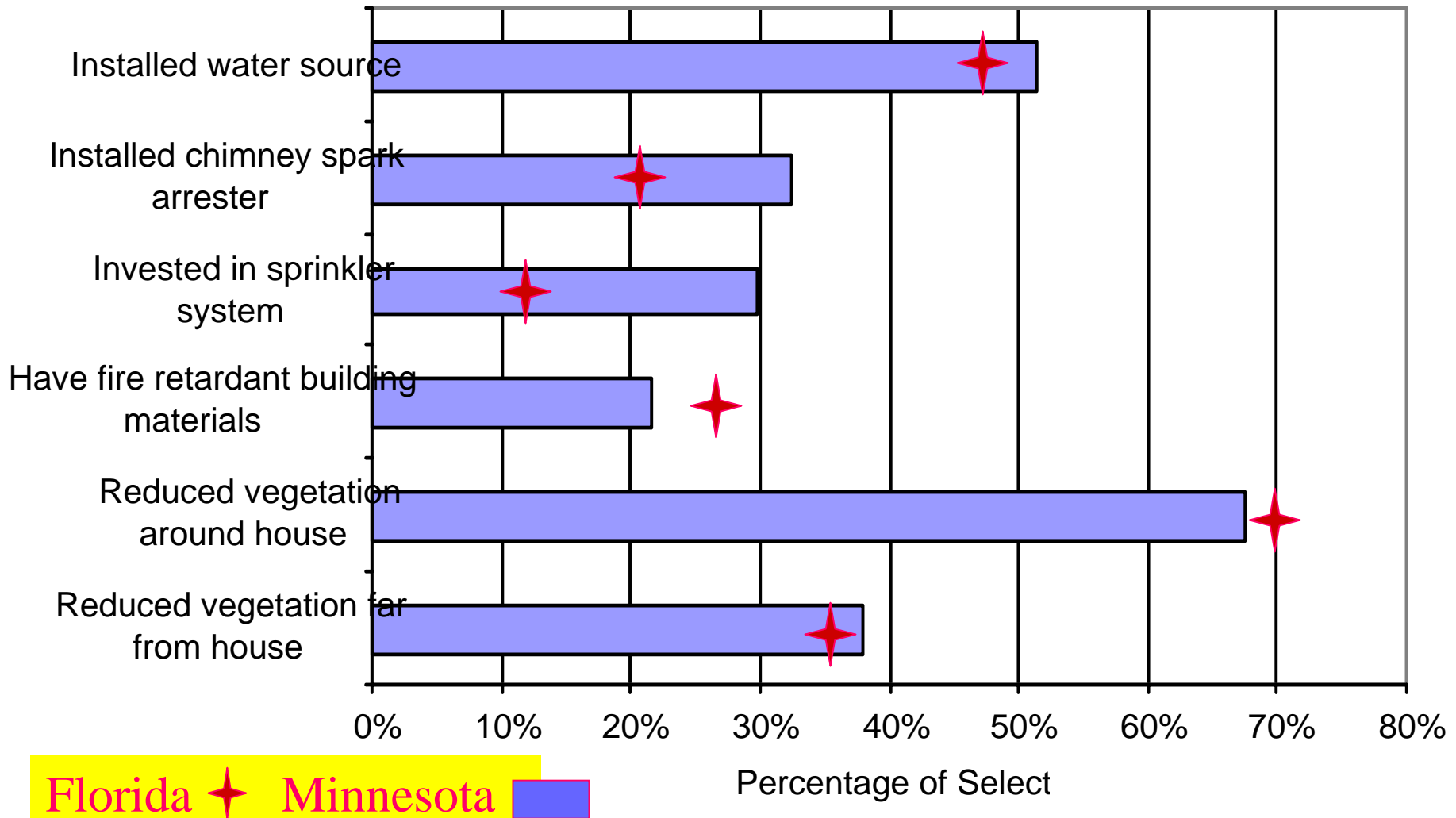
<i>Importance of landscape characteristics</i> (N=37)				
	<i>Not important</i>	<i>Moderately important</i>	<i>Highly important</i>	<i>N/A</i>
Providing <u>wildlife</u> habitat	3%	14%	83%	-
Attracting birds	3	4	81	3%
Keeping trees I planted	5	11	78	5
Having a vegetation <u>privacy</u> screen	0	22	76	-
Having shrubs and small trees near house	33	22	38	-
Maintaining open space	26	38	25	3
Having large shade trees near house	26	38	25	3
Mowing lawn	84	8	8	-

Survey of WUI homeowners on Caribou and Gunflint Trails, BWCA, MN, 2001

Perceived effectiveness of wildfire protection measures to protect home and investment

(N=37)	<i>Not effective</i>	<i>Moderately effective</i>	<i>Highly effective</i>	<i>N/A</i>
<i>Home/Infrastructure modification</i>				
Insurance	3%	3%	94%	-
Materials	13	19	38	-
Access Road	14	22	65	-
Sprinklers	24	27	49	-
Foam	19	35	35	11%
<i>Vegetation modification</i>				
Clearing near house	16	30	54	-
Clearing in undeveloped land around home	22	41	38	-

Actions taken to prevent wildfire damage in Minnesota and Florida, 2001 (N=1000)



Vogt - Extension of JFSP surveys in Florida and California to Michigan

Focus Groups and Mail Surveys

<u>SELECTED FINDINGS:</u>	CA (%)	FL (%)	MI (%)
Removed flammable vegetation on my property to protect home from fire	91	44	42
Experienced discomfort from smoke caused by wildland fire	68	61	17
General attitude toward prescribed burning (% Negative)	16	5	36
General attitude toward defensible space ordinance (% Negative)	8	28	32

Vogt

In 1980, a prescribed burn in Oscoda County escaped, burning 44 structures and killing one firefighter. This event (known as the Mack Lake fire) still has strong resonance for locals.

<i>Notable Michigan differences</i>	CA (%)	FL (%)	MI (%)
Friends, family or neighbors suffered property damage due to wildland fire	14	14	32
Been injured or suffered property damage from a wildland fire	3.5	5	9
Full time, year-round homeowner	89	97	57
What industry best describes where you have held jobs - Manufacturing	9	7	32

Vogt — Trust & Government

	CA (%)	FL (%)	MI (%)
I trust the government to make the best decision about the use of prescribed burning (% Disagreed)	36	25	54
I trust the government to make the best decision about enacting and enforcing DS ordinances (% Disagreed)	39	43	61

Which of the following agency levels were you thinking about? (check all that apply)	Local (%)	State (%)	Federal (%)
• California	50	73	66
• Florida	71	62	29
• Michigan	38	82	52

Daniel, Orland, and Vining

Computer Visualizations



Pilot test of hazard/value tradeoff study

- Preliminary findings: perceived fire risk and scenic beauty are negatively correlated (-0.54), both factors had significant effect on site preference



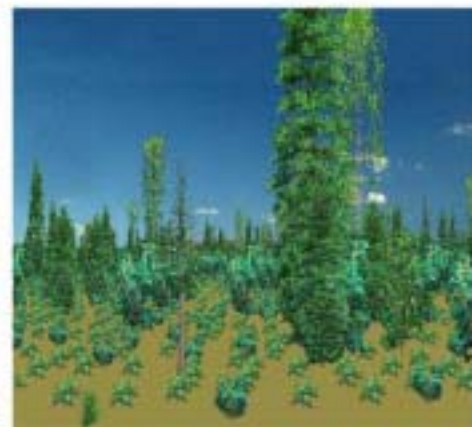
existing photo



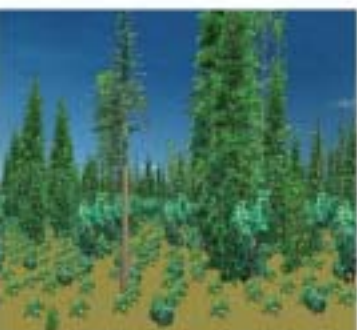
existing photo



existing photo



year 0



year 10



year 20



year 30



year 40



year 50



year 60



year 70



year 80



year 90



year 100

Overarching Themes



Thinning – only big no no is herbicides

Prescribed Burning – support is generally strong

Defensible Space

- There are some homeowners who know about hazard and are fairly adamant about doing nothing (fatalism, aesthetics) but it is a small percentage
- Range of views about effectiveness of different measures
- Importance of privacy
- Uncertainty about what vegetation modification means

Overarching Themes



***Trust* is Important**

- One place little support for PB is Michigan where little trust
- In Minnesota – working together on fire planning increased trust

**Negative relationship between
perceived fire hazard and scenic
beauty**